REMARKS/ARGUMENTS

In the Office Action dated September 19, 2006, Claims 1-27 are pending, of which Claims 1 and 14 are independent. Claims 1-11, 13-15, and 17-27 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,344,172 to Afeyan, et al. The remaining Claims 12 and 16 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Afeyan, et al. in view of U.S. Patent No. 4,108,602 to Hanson, et al. In addition, Claims 2 and 3 are rejected under 35 U.S.C. § 112, second paragraph.

Claims 1, 2, 3, and 10 are amended above. Applicant respectfully requests reconsideration in light of the amendments and the following remarks. The amendment of Claim 1 corrects typographical errors in the claim and is wholly unrelated to the patentability of the claim.

First, regarding the rejection of Claims 2 and 3 under § 112, Applicant has amended these claims per the Examiner's suggestions. In particular, Claim 2 is amended to positively recite an exhaust outlet, and Claim 3 is amended to recite a source of rinse fluid. In addition, Applicant has amended Claim 10 according to the Examiner's further suggestion, i.e., to recite that the processing device comprises an Ethernet port for communicating. Accordingly, Applicant submits that no ambiguity exists in the claims regarding whether the respective features are to be considered as elements of the apparatus. Therefore, Applicant requests withdrawal of the rejections under § 112.

Turning now to the rejections under § 102(b), Applicant respectfully traverses. Independent Claims 1 and 14 are rejected on the sole basis of being anticipated by Afeyan, et al. Claim 1 is directed to an apparatus for chemically analyzing a sample fluid. The apparatus includes two selection valves that provide a sample fluid and reagent fluid, respectively, to a fluid injection valve and, from there, to a sample vessel and analysis device. In particular, the first fluid selection valve is configured to selectively fluidly connect each of a plurality of sample input ports to a sample output port, and the second fluid selection valve is configured to selectively fluidly connect each of a plurality of reagent input ports to a reagent output port. The fluid injection valve is configured to receive the sample and reagent fluids from the sample output port of the first fluid selection valve and the reagent output port of the second fluid selection valve. Further, the fluid injection valve is adjustable between two positions. In the

first position, the fluid injection valve "fluidly connects the sample output port to the sample vessel such that the sample fluids can be injected into the sample vessel" and, in the second position, the fluid injection valve "fluidly connects the reagent output port to the sample vessel such that the reagent fluids can be injected into the sample vessel."

For example, the present application illustrates an apparatus **10** that includes selection valves **20**, **30**. The first selection valve provides sample fluids from sources **22a-22d** to a sample output port **24i** of the valve **20**, and the second selection valve provides reagent fluids from sources **32a-32f** to a reagent output port **34i** of the valve **30**. A fluid injection valve **40** is fluidly connected to both selection valves **20**, **30** as well as a sample vessel **50**. As described in the present application, the fluid injection valve can be adjusted to either of two positions. In the first position, the fluid injection valve **40** connects the output port **24i** of the first fluid selection valve **20** to the first pump **80** via the sample vessel **50**, and the analysis device **60** is fluidly connected to the return input port **24f** of the first fluid selection valve **20**. In the second position, the fluid injection valve **40** connects the output port **34i** of the second fluid selection valve **30** via the second pump **90** to the sample vessel **50** and therethrough to the analysis device **60**. *See* page 7, lines 12-18. Thus, as further described in the present application, any of the sample input ports **22a-22d**, and hence the corresponding sample fluids, can be connected to the fluid injection valve **40**, the sample vessel **50**, and the pump **80**. *See* page 8, lines 15-27. The fluid selection valve **30** can then be adjusted to connect any of the reagent input ports **34a-34f**, and hence the corresponding fill reagent, to the vessel **50**. *See* page 9, lines 1-4.

Afeyan, et al. does not teach or suggest a fluid injection valve that is configured to selectively connect the outputs of two fluid selection valves to a sample vessel as claimed. The Office Action indicates that elements **116**, **112** of Afeyan, et al. correspond to the fluid selection valves of Claim 1, and that elements **131**, **132** of Afeyan, et al. correspond to the fluid injection valve and the sample vessels of Claim 1. The columns receive fluids from solvent reservoirs **111a-f** and reservoirs **117a-d** by way of the mixing valves **116**, **112**. In this regard, Applicant notes that elements **131**, **132** of Afeyan, et al. are columns, not valves. Further, neither column **131**, **132** is configured to be connected to the output of mixing valve **116**. In fact, as shown in Figure 3 of Afeyan, et al., the output of mixing valve **116** is connected to valve **151**, which is configured to connect the output of the mixing valve **116** to either the loop **152** or line **118** (to

waste **154**), not the columns. Fluid from the reservoirs **117a-d** is provided to the columns only by first delivering the fluid to the loop **152**, and then from the loop while the loop is no longer connected to the output of mixing valve **116**. In short, the output of the mixing valve **116** is not connected to the column. As Afeyan, et al. fails to disclose this feature of Claim 1, Applicant respectfully submits that Afeyan, et al. does not anticipate the claim.

Similarly, Claim 14 is directed to a method of chemically analyzing a sample fluid and recites "adjusting a fluid injection valve to a first position such that the fluid injection valve fluidly connects the sample output port to a sample vessel." As noted above, the output of the mixing valve **116** is not connected to the column, and Applicant submits that Claim 14 is therefore distinguished from Afeyan, et al. for the same reasons discussed above.

The dependent claims provide various additional bases of distinction. For example, Claim 2 as amended recites that the fluid injection valve in the first position "fluidly connects the sample output port to the exhaust outlet via the sample vessel." The Office Action states that "[v]alves 134 and 133 may also be configured so as to permit passage of effluent or eluant from second system column 132 to waste or to detector 136 (exhaust outlet/port)." However, neither valve is a fluid injection valve that connects the sample output port of one of the two selection valves to the exhaust.

Claim 5 recites that "at least one of the first and second fluid selection valves has a port fluidly configured to be connected to the analysis device via the fluid injection valve to receive a fluid evacuated from the analysis device." Neither of the mixing valves **116**, **112** (asserted in the Office Action to correspond to the recited fluid selection valves) is configured to receive a fluid evacuated from the UV absorbance detector **136** of Afeyan, et al. (asserted in the Office Action to correspond to the recited analysis device).

Claim 6 recites two fluid pumps that are configured to be selectively connected by the fluid injection valve to the sample vessel "such that the fluid injection valve in the first position fluidly connects the first pump to the sample vessel and the fluid injection valve in the second position fluidly connects the second pump to the sample vessel." The Office Action merely states in this regard that the device of Afeyan, et al. includes "multiple pumps (113, 119, and others not labeled)." Pump **119** is connected to valve **151** and, regardless of the position of valve **151**, is not connected to the columns **131**, **132** (asserted in the Office Action to correspond to the

sample vessel). Even if pump **113** can be connected to the columns by the valve **151**, the valve is not configured to selectively connect two different pumps to a sample vessel as claimed, regardless of whether another pump is provided in the device as discussed by Afeyan, et al.

Claim 11 recites "a mixer configured to mix fluids in the analysis device." Similarly, Claim 22 recites "mixing the select sample fluid and reagent in the analysis device." The Office Action does not even assert that Afeyan, et al. provides a mixer or a mixing operation as claimed. The Office Action indicates that UV absorbance detector **136** corresponds to the claimed analysis device, but Afeyan, et al. does not teach or suggest that any mixer is provided for mixing in the UV absorbance detector. Indeed, the absorbance detector **136** is configured to receive fluids exiting the second column **132**, and Afeyan, et al. does not provide any suggestion for mixing the fluids exiting the column.

Dependent Claim 12 recites that the apparatus of Claim 1 further includes "a bubble detector configured to detect the presence of gas in a fluid passing through the sample vessel." Similarly, dependent Claim 23 recites that the method of Claim 14 further includes "detecting the presence of gas in a fluid passing through the sample vessel." Claims 12 and 23 stand rejected as being obvious over Afeyan, et al. in combination with Hanson, et al. In this regard, the Office Action acknowledges that Afeyan, et al. does not teach a bubble detector. However, the Office Action refers to Hanson, et al. stating that "Hanson et al. discloses automated multiple sample chemical testing method and apparatus of the character wherein air pressure purging is employed . . . to minimize interference with sample detection from the presence of bubbles or foam which tend to be generated during any such air pressure purging." Office Action, page 5. Further, the Office Action states that Afeyan, et al. discloses that the device includes a switching means for cleaning and a desire to purge the sample line, and that it would have been obvious "to modify the device of Afeyan to detect bubbles which may arise from the cleaning process." Id.

Applicant respectfully disagrees. Afeyan, et al. does not disclose or even suggest using air to purge any lines. Moreover, Afeyan, et al. does not disclose the use of air for purging the columns or otherwise introducing air into the columns during a purging operation. In fact, the Office Action does not refer to any particular purging operation of Afeyan, et al., and the only such "purging" operation identified by Applicant is performed with the valve **151** in its second state (i.e., the state other than that illustrated in Figure 3), such that ports 3 and 4 of valve **151** are

connected "so that any flow from section **115** purges the sample line to a waste vessel, thereby setting up the line for a new sample of different pH, concentration, or the like." In other words, fluid in section **115** is purged therefrom by a flow of other sample fluids. Afeyan, et al. does not contemplate the use of air for purging. Nor would the use of air for purging even accomplish the desired purpose of Afeyan, et al. to set up the line for a new sample. Further, even if air were used, it would not have been obvious to provide a bubble detector in the columns or UV absorbance detector of Afeyan, et al. since section **115** is not even connected to those components during the "purging" operation. Accordingly, Applicant submits that Claims 12 and 23 are not obvious, even in light of any fair combination of Afeyan, et al. and Hanson, et al.

For the foregoing reasons, Applicant requests withdrawal of the rejections of pending Claims 1-27.

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CONCLUSIONS

In view of the remarks presented above, Applicant submits that the present application is in condition for allowance. As such, the issuance of a Notice of Allowance is therefore respectfully requested. In order to expedite the examination of the present application, the Examiner is encouraged to contact Applicant's undersigned attorney in order to resolve any remaining issues.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,

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